



EFFECT OF *GLOMUS FASCICULATUM* ON SEEDLING GROWTH AND POD PRODUCTION OF COWPEA (*Vigna unguiculata* L. Walp.)

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Abstract

Investigation on the effect of *Glomus fasciculatum* on seedling growth and pod production of cowpea crop was carried out. The effect of the fungal organisms greatly influenced the fresh shoot, root and dry shoot and root. The *G. fasciculatum* was also found to greatly improve the seed and pod production of the cowpea, when compared with the untreated seedlings. The use of *G. fasciculatum* was found to be another alternative source of biofertilizer for yield improvements in cowpea [FJPAS 1(1)2016].

1.0 Introduction

Cowpea is an annual herbaceous legume that can reach more than 80 cm in height. Some varieties grow upright, while others have procumbent stems, often tinged with purple, that trail along ground. Large dark green trifoliate leaves provide a good ground cover that helps conserve soil moisture. The plant has a deep taproot with numerous spreading lateral roots that help stabilize the soil [3]. Cowpea is a dicotyledonous plant that belongs to the order *Fabaceae*; the crop is of major importance to the livelihood of people in the tropics. It provides food, animal feed and cash for the rural populace. It is beneficial to farmlands through *in situ* decay of roots, residues and ground cover from its spreading habits [1]. In the humid tropics of some western Nigeria, it is cultivated for its grains, leaves, green pods, Stover and as an anti-erosion crop. Cowpea grain is consumed directly after cooking or as a component of meals made from cereals or root crops.

Cowpea can sufficiently satisfy the tripartite need of providing (i) food for the farmer (ii) fodder for livestock especially during the critical period of the year (dry season) and (iii) fertility replenishment for the soil (through nitrogen fixation) which will ensure sustainable use of the farmer's limited land (for a longer period without much depletion of its nutrient (authority)). The protein in cowpea seed is rich in the amino-acids, lysine and tryptophan, compared to cereals grains however, the seed is deficient in methionine and cysteine when compared

to animal proteins. Therefore cowpea seed is valued as a nutritional supplement to cereals and an extender of animal proteins [3]. The crop can be used at all stages of growth as a vegetable crop; the tender green leaves are important food source in Africa and prepared as a pot herb, like spinach, immature snapped pods are used in the same way as snap beans, often being mixed with other foods, green cowpea seeds are boiled as a fresh vegetable, or maybe carried or frozen and dry mature seeds are also suitable for boiling and canning. [4]. In many areas of the world, cowpea is the only available high quality legume hay for livestock feed. Digestibility and yield of certain cultivators have been shown to be comparable to alfalfa. Cowpea may be used green or as dry fodder. It is also used as a green manure crop, a nitrogen fixing crop, or for erosion control. Similar to other grain legumes, cowpea contains trypsin inhibitors which limit protein utilization.

2.0 Materials and Methods

2.1 Experimental site: The experiment was carried out beside the general biology laboratory, College of Science, Engineering and Technology of the Osun State University Osogbo, Osun State. This experiment was conducted in the screen house of the Department of Biological Sciences, Osun State University, Osogbo, Osun state.

2.2 Collection of Cowpea seeds: The variety of cowpea named IT99k-377-1 was sourced from the